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Borderline Personality Disorder and the Rate of Intergenerational Transmission of Child Maltreatment between Mothers and Adolescents

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To the Graduate Council:

I am submitting herewith a thesis written by Stephanie Brooke Kors entitled "Borderline Personality Disorder and the Rate of Intergenerational Transmission of Child Maltreatment between Mothers and Adolescents." I have examined the final electronic copy of this thesis for form and content and recommend that it be accepted in partial fulfillment of the requirements for the degree of Master of Arts, with a major in Psychology.

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Borderline Personality Disorder and the Rate of Intergenerational Transmission of Child Maltreatment between Mothers and Adolescents

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Abstract

Borderline Personality Disorder (BPD) is a severe mental illness often characterized by affective instability, an unstable sense of self, fear of abandonment, and difficulty maintaining stable relationships with others. Child maltreatment has been identified as a risk factor for the development of the disorder. Additionally, research has found offspring of mothers with BPD experience higher rates of maltreatment than those without a mother with the disorder. The current study examined maternal child maltreatment and intergenerational transmission of child maltreatment in the context of maternal borderline features in a sample of 41 adolescents aged 14-18 and their mothers. Results revealed that maternal diagnosis of BPD was associated with physical abuse, physical neglect, emotional abuse, emotional neglect, and sexual abuse, but not supervisory neglect. Maternal BPD features were associated with emotional abuse, sexual abuse and physical neglect, but not physical abuse, emotional neglect, or supervisory neglect. Additionally, intergenerational transmission of child maltreatment indeed occurred at a higher rate for offspring of mothers with BPD. Further, the borderline features of negative relationships and affective instability specifically significantly predicted transmission, while identity disturbance and self-harm/impulsivity were marginally significant in predicting transmission. Empirical and clinical implications of maternal BPD as it relates to child maltreatment subtypes and transmission of child maltreatment are discussed.

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CHAPTER I

Introduction

Borderline Personality Disorder (BPD) is a severe mental disorder, which impacts functioning in a variety of domains including interpersonal relationships, impulse control and affect regulation (American Psychiatric Association, 2013). Of the various risk factors associated with the etiology of the disorder, child maltreatment is one of the most cited (Ball & Links, 2009; Bandelow et al., 2005; Paris, 2009; Zanarini, Williams, Lewis, & Reich, 1997). The prevalence of maltreatment histories in BPD populations is far above that of normative populations, with retrospective self-reported rates as high as 71% (Paris, 2009). Not only are those with BPD more likely to report having experienced maltreatment as children, but their adolescent offspring are also more likely to experience maltreatment as well (Kurdziel, 2017). Indeed, research has found that adult BPD features are associated with a *risk* of perpetrating child abuse (Prodgers, 1984) as well as a risk of perpetrating *substantiated* child abuse (Perepletchikova, Ansell, & Axelrod, 2012). Moreover, in a sample of mothers who lost custody due to substantiated child maltreatment, 50% exhibited clinical levels of BPD features (Perepletchikova et al., 2012). Missing from the literature on the intersection of BPD and maltreatment, however, is the rate of intergenerational transmission of child maltreatment in families whose mother has BPD, which is particularly significant given the strikingly high rates of maltreatment in both generations. The current study sought to expand upon the findings from Kurdziel (2017), which found that offspring of mothers with BPD experienced more physical abuse, emotional abuse, neglect, but not sexual abuse than controls, by examining the rate of intergenerational transmission of child maltreatment in families whose mothers have BPD. The

current sample includes a subsample of the original sample which included the measures needed for the current study.

The intergenerational transmission of child maltreatment is widespread, with rates of transmission estimated to be between 18—40 % (Buchanan, 1996; Coohey & Braun, 1997; Egeland, 1988; Egeland, Bosquet, & Chung, 2002; Friedrich & Wheeler, 1982; Hunter & Kilstrom, 1979; Kaufman & Zigler, 1987; McCloskey & Bailey, 2000; Spinetta & Rigler, 1972; Steele & Pollock, 1968). Moreover, the relationship between maternal child maltreatment and offspring child maltreatment has been consistently established across cultures (Berlin, Appleyard, & Dodge, 2011; Sidebotham, Heron, & Team, 2006). Despite decades of identifying risk factors (Belsky et al., 2009.; Egeland et al., 2002; Kotch, Muller, & Blakely, 1999), the rate of transmission in the United States is still high (Berlin et al., 2011). While the majority of those who experience child maltreatment will not maltreat their own children (Kaufman & Zigler, 1987), a significantly higher percentage of children whose caregiver experienced maltreatment will experience it themselves than those without, making it a critical issue to address in terms of child development (Cort, Toth, Cerulli, & Rogosch, 2011).

Experiencing sexual abuse, physical abuse, or neglect as a child can have detrimental consequences for normative development through various mechanisms, impacting many crucial domains of functioning. As maltreatment often occurs within the context of the caregiver-child relationship, child maltreatment can impair the child's ability to interpret others' affective states, distort the child's ability to self-regulate emotions, and foster the development of negative interpersonal schemas (Fonagy, Target, & Gergely, 2000; Pollak, Cicchetti, Hornung, & Reed, 2000; Pollak & Sinha, 2002). Moreover, children who experience trauma in early life, such as maltreatment, will often have extreme reactions to stress later in life, becoming hyper-responsive

or hypo-responsive in a given situation compared to their peers (Cicchetti & Curtis, 2005; Cummings, Pellegrini, Notarius, & Cummings, 1989; Pollak et al., 2000). Furthermore, unlike their peers, this population may be more likely to depend upon primitive coping skills such as dissociation when faced with developmental challenges (Macfie, Cicchetti, & Toth, 2001). With this comes difficulty with other developmental milestones, such as reflective functioning, the ability to understand the self and others' mental states such as motives and emotions (Fonagy et al., 2000). As Laub and Hamburger (1993) concluded, trauma "overwhelms and defeats one's capacity to organize it" (p. 32).

Parental psychopathology is an established risk factor for the transmission of maltreatment from one generation to the next (Dixon, Browne, & Hamilton-Giachritsis, 2005). Moreover, some researchers have found that the interaction between maternal psychopathology and maternal history of maltreatment puts youth at an elevated risk for experiencing maltreatment themselves. For instance, a recent study found that only offspring of mothers with depression *and* a history of maltreatment were at an increased risk of experiencing maltreatment themselves (Plant, Barker, Waters, Pawlby, & Pariante, 2013). In contrast, neither offspring of mothers with solely depression or solely a history of maltreatment in this sample were at an increased risk of experiencing abuse or neglect themselves. Thus, it may be that the interaction of psychopathology and maternal maltreatment history that puts offspring at a particularly elevated risk. However, only a few studies have explored maternal psychopathology (depression) in relation to the intergeneration transmission of maltreatment (Dixon et al., 2005; Plant et al., 2013). No research to date has explored BPD. This is an especially important omission because of the role of maltreatment in the etiology of BPD and the subsequent risk to their offspring of developing BPD themselves.

The stress and psychopathology model of intergenerational transmission of maltreatment postulates that transmission is mediated by parental psychopathology and exacerbated by stress level (Brown-Jones, 1997). Moreover, persons with high levels of psychopathology are more likely to utilize more intense physical discipline when stressed than persons with low levels of psychopathology (Dixon et al., 2005). Given that those with BPD report higher levels of daily stress (Reitz et al., 2012) and also that caregiver life stress has been found to be related to offspring child maltreatment (Barton, Baglio, & Braverman, 1994; Whipple & Webster-Stratton, 1991), those with BPD may be at a particularly elevated risk for transmission. In fact, many of the traits characteristic of persons with BPD may put their children at an elevated risk for experiencing maltreatment as their caregiver did. Because persons with BPD are especially prone to angry outbursts and frequently struggle with tolerating their own and others affect (Herman & van der Kolk, 1987), they may have more difficulty processing experiences of maltreatment than those without the disorder. Studies show that caregivers who exhibit impulsive and aggressive behavior are more likely to engage in harsh or abusive parenting (Belsky & Vondra, 1989). Specifically, Zalewski et al. (2015) found that affective and behavioral dysregulation, rather than identity disturbance or interpersonal dysregulation accounted for the associations between maternal BPD symptoms and poorer parenting. Moreover, many of the challenges characteristic of persons with BPD, such as impulsivity, low distress tolerance and angry outbursts, may be the very qualities which put a mother's offspring at a particular risk for maltreatment themselves.

Several protective factors have been identified which help prevent individuals who have experienced abuse or neglect from continuing the cycle. These include emotional support, receiving psychotherapy and engaging in stable interpersonal relationships (Afifi & MacMillan, 2011). Given that those with BPD are more likely than those without to have unstable and

stormy interpersonal relationships, they may also be less likely to receive emotional support. Lack of emotional support, along with significant life adversity, have been found to increase stress (Adamakos et al., 1986), which has been associated with negative relationships (Kurdziel, 2016), and the likelihood of intergenerational transmission of maltreatment (Egeland, Jacobvitz, & Sroufe, 1988). Thus, those with BPD may be less likely to experience the very protective factors which are known to break the cycle of abuse and neglect, and more likely to experience risk factors which make individuals more vulnerable to this cycle.

The Current Study

The current study aimed to address a significant gap in the literature on BPD and the intergenerational transmission of child maltreatment. This is the first study to examine the rate of intergenerational transmission of maltreatment in a sample of mothers with BPD and their adolescent offspring. Despite maternal BPD being associated with poorer parenting (Zalewski et al., 2014), little is known about the impact of maternal BPD on parenting behaviors (Stepp, Whalen, Pilkonis, Hipwell, & Levine, 2012). Specifically, much of the research on the intersection of parenting and BPD has involved infant and toddler aged offspring. Consequences for more developed offspring is an important omission in the literature given particular developmental tasks are often impacted by parenting behaviors associated with maternal BPD (Macfie, 2009).

We hypothesized that: (1) in the sample as a whole, a mother's history of maltreatment would be associated with her offspring's experience of maltreatment; 2(a) a mother's borderline features and BPD diagnosis 2(b) would be associated with her history of maltreatment (3) the rate of intergenerational transmission in families whose mother has BPD would be higher than in families whose mother does not have BPD; 4(a) total maternal borderline features and each

individual borderline feature would significantly predict increased likelihood of intergenerational transmission of child maltreatment; and 4(b) affective instability would be most highly predictive of increased likelihood of intergenerational transmission of child maltreatment.

CHAPTER II

Method

Participants

The proposed study sampled 41 adolescents aged 14-18 years old (M = 15.62, SD = 1.30) and their mothers, who participated in a larger study which examined offspring of mothers with BPD. The current sample is made up of a subsample of the original sample which included 19 mothers with BPD and 22 mothers without the disorder who had completed the measures required for our proposed hypotheses. The sample was consistent with the demographic characteristics of the surrounding area in which the data was collected, with 92% having identified as Caucasian (n = 35), 8% having identified as biracial, Hispanic, or Pacific Islander (n = 3). See Table 1 for demographic information.

Recruitment

With permission from the University of Tennessee Institutional Review Board, adolescents and their mothers with and without BPD were recruited from the community and from mental health clinics. Recruitment for both groups occurred in five different counties in a southeastern state in both urban and rural areas. Participants who could not give informed consent were excluded from the study. For example, those who showed symptoms of psychosis were excluded. In order to recruit mothers who met criteria for BPD, clinicians at outpatient treatment centers were contacted, briefed on the study, and asked to distribute brochures to patients who displayed symptoms of BPD. Clinicians from a variety of settings were contacted, including psychiatrists, nurse practitioners, and therapists. In addition, participants were recruited directly from the community through posted flyers which asked questions related to BPD, such as “Do you often make impulsive decisions? Are you afraid of being abandoned? Do you find it

difficult to control your anger? Have you hurt yourself or threatened to do so?" Comparison adolescents and their mothers were recruited through flyers distributed by research assistants at events in the community such as high school sporting events. Both flyers requested adolescents and their mothers participate in a study on child development.

Procedures

Mothers interested in participating in the study were screened over the phone for demographic information as well as preliminary questions regarding BPD symptoms. Participants were then interviewed by a research assistant at either the participant's home or a meeting place suggested by the participant. During this initial meeting, informed consent from the mother and informed assent from the adolescent, demographic information for the family, and maternal self-reported BPD symptoms were gathered. Participants then scheduled a 3-hour laboratory visit with research assistants. Both transportation to and from the visit and babysitting during the visit were provided to participants. During this visit, the mother and adolescent completed self-report questionnaires. Additionally, mothers participated in a structured clinical interview for BPD.

Measures

Demographics. Demographic information was obtained through the Mt. Hope Family Center's Interview (Mt. Hope Family Center, 1995). Race, ethnicity, age, annual income, education background, marital status, and caregiver information was obtained. See Table 1.

Borderline Personality Disorder. BPD was assessed through the Structured Clinical Interview for the DSM-IV axis II disorders (First, Spitzer, Gibbon, & Williams, 1997) following the participants' completion of a brief self-report screening questionnaire for BPD. The SCID-II is a semi-structured interview, which has been assessed for inter-rater reliability and internal

consistency (Lobbestael, Leurgans, & Arntz, 2011; Maffei et al., 1997). A licensed clinical psychologist administered the SCID-II to all mothers participating in the study to assess presence of maternal BPD.

Borderline features. Maternal borderline features were assessed using the Personality Assessment Inventory (Morey, 1991). The Borderline Features Scale of the PAI (PAI-BOR) is a 24 item inventory which measures responses on a 4-point Likert scale, ranging from "false" to "very true". The PAI-BOR measures borderline features through four subscales: affective instability, identity disturbance, negative relationships, and self-harm/impulsivity. The subscales measure affective instability (mood swings and difficulty managing anger), identity problems (identity instability and uncertainty about self), negative relationships (intense, stormy interpersonal relationships), and self-harm/impulsivity (impulsive behavior related to substance use, sexual behavior, or self-injury) (Morey, 1991). Although the PAI-BOR does not determine a diagnosis of BPD, it has been established as an empirical means of evaluating borderline symptomology, with a cutoff score of 38 for clinical range (Trull, 1995). In the current sample, 37% had a total borderline features score in the clinical range. Moreover, utilizing the SCID-II and the PAI-BOR allows researchers the opportunity to evaluate BPD as both a continuous and categorical variable. Total borderline features and diagnosis of BPD were significantly positively correlated in the current sample ($r = .85$, $p < .01$).

Childhood maltreatment. Reports of childhood experience of maltreatment for both adolescents and mothers were coded from transcriptions of the Adult Attachment Interview; AAI (George, Kaplan, & Main, 1985), which is designed to assess the interviewees' current stance towards attachment to her caregivers in childhood. The interview asks the participant to describe in detail their relationship with each of their caregivers. As part of this interview, questions about

the experience of childhood maltreatment were posed. The AAI is a particularly useful tool to measure maltreatment history as it consists of open ended interview questions regarding early traumatic experiences, allowing the participant to freely discuss childhood events in great detail. The interview includes questions such as "Were your parents ever threatening to you in any way?" "Some people have memories of threats or of some kind of behavior that was abusive--Did anything like this ever happen to you, or in your family?" and "Did you ever feel rejected as a child?" The AAI has been used previously as a measure of maltreatment (Bailey, Moran, & Pederson, 2007; Madigan, Vaillancourt, McKibbon, & Benoit, 2012).

Two trained research assistants double coded of all AAIs using the Maltreatment Classification System (Barnett, Manly, & Cicchetti, 1993), an internationally recognized instrument for abuse and neglect evaluation. The coders were blind to which mothers and adolescents were related to each other. Adequate interrater reliability was obtained (mother's sexual abuse (k = 1.00), mother's physical abuse (k = 1.00), mother's emotional abuse (k = .89), mother's emotional neglect (k = .92), mother's physical neglect (k = .91), mother's overall neglect (k = 1.00), mother's supervisory neglect (k = .91), adolescent's sexual abuse (k = 1.00), adolescent's physical abuse (k = 1.00), adolescent's emotional abuse (k = .94), adolescent's emotional neglect (k = .95), adolescent's physical neglect (k = .95), adolescent's overall neglect (k = 1.00), adolescent's supervisory neglect (k = .96).

The Maltreatment Classification System (Barnett et al., 1993) categorizes child maltreatment by subtype of abuse and neglect. These include sexual abuse, physical abuse, emotional abuse and neglect. Sexual abuse involves sexual contact between an adult perpetrator and a child as well as exposure to pornography. Physical abuse refers to intended physical harm to the child. Neglect refers to a failure to meet emotional and physical needs of the child. The

presence or absence of each subtype of child maltreatment was coded for each participant. Given that each subtype of neglect involves disparate conditions (Dubowitz, Pitts, & Black, 2004), we subdivided neglect into emotional, physical and supervisory subtypes. Emotional neglect refers to the lack of a nurturing emotional environment for the child, while physical neglect refers to lack of basic needs, such as food and shelter. Supervisory neglect refers to inadequate supervision from a caregiver. See table 2 for percentages of maltreatment subtypes in each group in the current sample.

Overall maltreatment was coded for both mothers and adolescents as present/absent. Subtypes of maltreatment (sexual abuse, physical abuse, emotional abuse, physical neglect, emotional neglect, supervisory neglect, overall neglect) were also coded present/absent. Intergenerational transmission was coded yes/no when both the mother and the adolescent in a family unit reported a history of maltreatment, regardless of which subtype was reported. For example, if a mother reported sexual abuse and her adolescent reported physical abuse, intergenerational transmission of maltreatment would be scored “1.”

CHAPTER III

Results

As proposed in hypothesis 1, the association between a mother's overall experience of maltreatment and her adolescent offspring's overall experience of maltreatment was determined by conducting a Pearson correlation. As predicted, analyses revealed that a mother's overall experience of maltreatment significantly positively correlated with her adolescent offspring's experience of maltreatment r =.33, p <.05.

As proposed in hypothesis 2(a), associations between maternal diagnosis of BPD and a categorical measure of her history of maltreatment (overall maltreatment, physical abuse, sexual abuse, emotional abuse, emotional neglect, physical neglect, supervisory neglect) were determined by conducting 7 Pearson correlations. Our hypothesis was partially supported. Analyses revealed maternal diagnosis of BPD was significantly correlated with overall maltreatment (r =.47, p < .01), physical abuse (r = .35, p < .05), emotional abuse (r = .61, p < .001), sexual abuse (r = .66, p < .01), emotional neglect (r = .35, p < .05), physical neglect (r =.51, p < .01), and overall neglect (r =.51, p < .01). Contrary to what we predicted however, supervisory neglect was not significantly related to maternal diagnosis of BPD (r =.21, p = .20).

To test hypothesis 2(b), that maternal borderline features would be associated with a categorical measure of her history of maltreatment (overall maltreatment, physical abuse, emotional abuse, physical neglect, emotional neglect, sexual abuse), Pearson correlations were conducted. Total borderline features and each individual borderline feature were significantly associated with emotional abuse, sexual abuse, physical neglect, and overall neglect. As we predicted, emotional abuse, sexual abuse, and overall neglect were significantly positively associated with each maternal borderline feature. Interestingly, the only borderline feature

marginally associated with a mother's overall experience of maltreatment was negative relationships. Negative relationships were also the only borderline feature marginally significantly associated with physical abuse. Contrary to what we predicted, physical abuse, emotional neglect, and supervisory neglect were not significantly associated with any borderline feature or total borderline features. See Table 2 for correlations.

To test hypothesis 3, that families whose mother has BPD would experience intergenerational transmission at a higher rate than those without BPD, an independent samples *t*-test was conducted. As predicted, there were significant differences for mothers with BPD (M = .78, SD = .43) and mothers without the disorder (M =.09, SD = .43). Analyses indicated the rate of transmission was indeed significantly higher for mothers with BPD than normative comparisons, $t(39) = 6.24$ $p < .01$.

As proposed in hypothesis 4(a), 5 separate binary logistic regressions were conducted to test if maternal affective instability, negative relationships, identity disturbance, self-harm/impulsivity, and total maternal borderline features significantly predicted intergenerational transmission of child maltreatment. The continuous variable of each borderline feature and total borderline features served as the independent variable and the categorical variable of intergenerational transmission of child maltreatment served as the dependent variable. As predicted, maternal total BPD features significantly increased the likelihood of transmission. Analyses revealed one standard deviation increase in total maternal BPD features made the likelihood of intergenerational transmission of child maltreatment 1.10 times more likely ($p <$ .01). One standard deviation increase in affective instability made transmission 1.21 times more likely ($p < .05$). Similarly, one standard deviation increase in negative relationships made

transmission 1.24 times more likely ($p < .05$). Self-harm/impulsivity and identity disturbance were marginally significant in predicting transmission. See Table 4.

As proposed in hypothesis 4(b), maternal borderline features were further explored in relation to likelihood of intergenerational transmission of child maltreatment. A separate logistic regression analysis was conducted to test which borderline feature was most highly predictive of intergenerational transmission of child maltreatment. Affective instability, negative relationships, self-harm/impulsivity, and identity disturbance were simultaneously entered into a binary logistic regression as independent variables. The categorical variable of intergenerational transmission of child maltreatment served as the dependent variable. Our hypothesis was partially supported. Analyses revealed the borderline feature of maternal negative relationships made the likelihood of intergenerational transmission of child maltreatment 1.5 times more likely ($p < .05$). Additionally, the borderline feature of affective instability was marginally significant in predicting likelihood of intergenerational transmission of child maltreatment, making transmission 1.37 times more likely ($p < .10$). Identity disturbance ($p = .24$) and self-harm/impulsivity ($p = .48$) were not significant in predicting likelihood of transmission. See Table 5.

CHAPTER IV

Discussion

The current study investigated whether the rate of intergenerational transmission differed for offspring of mothers with BPD and families of mothers without BPD. The study also examined which maternal borderline features may put families at a greater risk for transmitting maltreatment generationally. Additionally, the present study examined how a mother's history of child maltreatment relates to her adolescent's experience of maltreatment as well as her experience of BPD. Lastly, this study examined how various subtypes of maltreatment are differentially associated with maternal borderline features. Findings from this study have significant implications for the application and development of preventative interventions for this high-risk population.

First, we tested whether maternal child maltreatment subtypes were associated with maternal borderline features. As predicted, sexual abuse, emotional abuse, physical neglect, and overall neglect were all significantly associated with every borderline feature. Contrary to what we predicted, physical abuse, emotional neglect, and supervisory neglect were not significantly associated with any borderline feature. Interestingly, we found no differences in maternal borderline features as they relate to specific maltreatment subtypes. These findings are consistent with previous research, which also found no one borderline feature to be more strongly associated with maltreatment history (Hecht, Cicchetti, Rogosch & Crick, 2014). Such findings suggest certain subtypes of maltreatment may be more closely related to the development of BPD.

For instance, sexual abuse, which was associated with elevated borderline features in the present study, has been consistently cited as a risk factor for the development of BPD (Weaver &

Clum, 1993; Johnson et al., 1999). Our finding that physical neglect is associated with elevated BPD features is also consistent with previous research (Hecht, Cicchetti, Rogosch & Crick, 2014). Notably, physical abuse was not significantly associated with elevated borderline features in our sample, which contradicts previous research which supports such a link (Hecht, Cicchetti, Rogosch & Crick, 2014), while emotional abuse was significantly associated with elevated borderline features. Such findings are consistent with a recent meta-analysis which found physical abuse to be less predictive of long-term consequences than emotional abuse or sexual abuse (Norman et al., 2012). Notably, previous research has found childhood emotional abuse, not any other form of maltreatment, predicted a diagnosis of BPD in male participants (Briere & Elliot, 2003) and in a sample of both men and women (Bornovalova, Gratz, Delany-Brumsey, Paulson, and Lejuez (2006). Additionally, emotional abuse is the most likely maltreatment form to occur in isolation (Perez-Fuentes et al., 2013) and sexual abuse, which was also significantly associated with elevated borderline features in the current study, often occurs in tandem with emotional abuse (Sørbø, Grimstad, Bjørngaard, Schei, & Mirjam Lukasse, 2013). Allen (2006) notes that consequences of emotional abuse may be uniquely related to features of the disorder. For instance, emotional abuse and neglect, which were both significantly associated with borderline features in this sample, are most strongly related to dissociation, a common symptom of the disorder than other maltreatment forms (Watson, Chilton, Fairchild & Whewall, 2006).

In fact, some researchers argue emotional abuse may lay the groundwork for the invalidating environment characteristic of Linehan's (1993) biosocial theory (Kuo et al., 2014). Rather than developing skills for regulating difficult emotions and navigating interpersonal relationships, victims of emotional abuse often have heightened emotional arousal and diminished emotional awareness of themselves and others (Linehan, 1993; Thompson & Calkins,

1996). As it relates to parenting in the context of BPD, mothers with BPD may react with harsher parenting if they perceive their relationship with their adolescent offspring to become more tumultuous or less emotionally close (Morse et al., 2009). Given parental criticism has been associated with the etiology of the disorder (Chaevens et al., 2005; Crowell, Beauchaine & Linehan, 2009) and emotional abuse has been linked to BPD features through emotion dysregulation, targeting emotional abuse in treatments for mothers with BPD may be an important step in breaking the cycle of abuse and neglect in this population.

While it has been found that 30-90% of those with BPD report histories of maltreatment (Ball & Links, 2009; Bornovalova et al, 2006; Carlson et al., 2009; Golier et al., 2003; Laporte & Buttman, 1996; Zanarini, 2000), the current study is the first to identify intergenerational transmission of maltreatment indeed occurs at a higher rate for families of mothers with BPD than normative comparisons. Identifying maternal BPD as one such mechanism for the transmission of maltreatment from one generation to the next is particularly significant given the striking similarities between challenges faced by maltreated children and adults with BPD. Notably, children who experience abuse and neglect exhibit relational dysregulation, impulsive behavior, affective dysregulation and distorted representations of themselves and others (Cicchetti & Valentino, 2006; Rogosch & Cicchetti, 2005; Rogosch, Cicchetti & Aber, 1995; Shields & Cicchetti, 1997; Toth et al., 2000) which also reflect both the core features of BPD and significant challenges for parenting. While researchers acknowledge the potential developmental pathway such similarities suggest (Hecht, Cicchetti, Rogosch & Crick, 2014), no such research has examined a potential cycle of both child maltreatment and BPD occurring beyond the etiology of the disorder within an individual, but rather through their offspring as well. Moreover, given several developmental models (Linehan, 1993; Zanarini & Frankenburg, 1997;

Hughes, Crowell, Uyeji & Coan, 2012) propose BPD emerges from both environmental and biological factors, it may be that offspring of mothers with BPD are both genetically and environmentally vulnerable to perpetuating the cycle of maltreatment.

BPD Features and Intergenerational Transmission of Child Maltreatment

While mothers with BPD experience dysfunction in many areas, our results suggest dysregulated interpersonal relations and affect may be contributing most to the development of parenting behaviors which put offspring at risk for maltreatment. In the current study, both negative relationships and affective instability increased likelihood of intergenerational transmission of maltreatment with negative relationships being more highly related to transmission than affective instability. Our results differ slightly the findings of Zalewski et al. (2014) whose results suggested poorer parenting from mothers with BPD is more highly related to affective dysregulation rather than interpersonal dysregulation, although Zalewski notes maternal interpersonal dysregulation may also impact developmental outcomes and did not investigate maltreatment specifically.

Moreover, the relational patterns of those with BPD, which are often characterized by rejection sensitivity (Strimpfel, 2012) and frantic efforts to avoid abandonment create challenges for mothers with the disorder, particularly as their offspring enter adolescence, a developmental period often associated with an adolescent's increased desire for autonomy (Taradash et al., 2001). A mother with borderline features may engage in more intrusive and controlling parenting behaviors as they navigate their adolescent offspring's desire for separation and diminished need for emotional support (Zalewski et al., 2014). If a mother has difficulty with interpersonal relationships outside of her mother-child dyad, it may be more challenging to allow her adolescent offspring the increased autonomy they desire given she may have limited socio-

emotional support elsewhere. Moreover, chronic maltreatment has been associated with a diminished ability to maintain positive interpersonal relationships (Jaffee & Maikovich-Fong, 2011), which has been theorized to be a precursor to higher scores for maltreated adolescents on the negative relationships subscale of BPD (Hecht, Cicchetti, Rogosch & Crick, 2014).

There are a number of strengths in the current study. Most importantly, the current study is the first to examine how maternal BPD relates to the likelihood of intergenerational transmission of child maltreatment. While one such study examines maternal depression as it relates to the cycle of abuse and neglect (Plant, Barker, Waters, Pawlby, & Pariante, 2013), no study has yet examined any other maternal psychopathology despite it being a risk factor for perpetration of maltreatment (Laulik, Allam & Browne, 2016) and a history of maltreatment being a risk factor for the development of BPD (Ball & Links, 2009). Additionally, the design of our study allowed us to examine associations underlying this relationship in a way that had not yet been done before. For instance, maternal BPD was measured as both a categorical and continuous variable. Examining our data in this way allowed us to increase our understanding of what features in particular may contribute to the cycle of abuse and neglect as it relates to maternal psychopathology. Lastly, we measured various subtypes of abuse and neglect which allowed us to examine how different forms of maltreatment differentially relate to maternal borderline features.

While our sample was representative of the area we recruited from, it was relatively homogeneous racially and ethnically. Future research should aim to recruit from racially and ethnically diverse areas in order to increase generalizability to other areas of the country. Second, our study did not account for severity or chronicity of maltreatment in the mother, which has been shown to increase likelihood of transmission (Pears & Capaldi, 2001). Future research

should examine how severity or chronicity of maternal child maltreatment might interact with maternal BPD features to impact the likelihood of intergenerational transmission in this population. Lastly, given our limited sample size, it is possible that we were unable to detect some relationships that truly did exist.

As BPD is prevalent in men and women equally in community samples (Grant et al., 2009; Sansone & Wiederman, 2014), future studies should examine intergenerational transmission of maltreatment for families of fathers with BPD. Additionally, those with BPD are more likely to experience multiple subtypes of maltreatment and they are also more likely to experience maltreatment from more than one person (Weierstall, Muller & Rockstroh, 2013). Thus, future research should also examine how perpetrator impacts the consequences of childhood maltreatment both in the context of the development of BPD as well as the intergenerational transmission of child maltreatment. Future research should also examine how developmental timing of maltreatment differentially impacts the likelihood of the maltreatment transmitting to the next generation using longitudinal data. Given that severity of maltreatment has been linked with both severity of BPD features and overall severity of interpersonal relationships (Sansone, Songer, & Miller, 2005; Silk, Lee, Hill, & Lohr, 1995; Zanarini et al., 2002), future research should also examine how chronicity and severity of maltreatment impacts the rate of transmission in the context of maternal BPD.

Conclusion

The nature of BPD creates unique challenges for parenting, particularly as it relates to the intergenerational transmission of child maltreatment. Our findings have significant implications for the early identification and intervention with this high-risk population. There are currently no empirically based treatments for mothers with BPD (Stepp et al., 2012). Given previous findings

that 90% of adolescents whose mothers have BPD experience maltreatment (Kurdziel, 2015), targeting the experience of maltreatment in the next generation may indirectly also diminish the likelihood of continuing the cycle of maltreatment. Additionally, it will be important for practitioners working with mothers with BPD to target relational and affective dysregulation in their efforts to reduce risk of transmission of child maltreatment.

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Appendices

Table 1

Demographic Information

Variable	Whole sample $N = 41$ *M* (*SD*)	BPD group $n = 19$ *M* (*SD*)	Comparison group $n = 22$ *M* (*SD*)	*t*(41)
Adolescent age (years)	15.61 (1.30)	15.22 (1.13)	15.82 (1.32)	1.16 (.25)
Family yearly income ($)	26,273(14,975)	23,578(11,354)	28,030(16,939)	.89 (.39)
Number of adults in home	1.84 (0.75)	1.80 (0.76)	1.87 (0.76)	.27 (.79)
Number of children in home	2.13 (1.21)	1.67 (.742)	2.43 (1.40)	1.98 (.06)
Adolescent gender (female)	47%	47%	48%	.07 (.95)
Adolescent ethnic minority	8%	4%	13%	1.82 (.08)
Mother has GED/H.S. Diploma	80%	71%	89%	.934 (.36)
Mother marital status (single)	34%	35%	35%	.09 (.93)

Table 2

Percentages of Maltreatment Subtypes for Mothers and Offspring in BPD and Control Group

	BPD		Control	
	Mothers	Offspring	Mothers	Offspring
Maltreatment subtype	(*n* = 19)	(*n* = 19)	(*n* = 22)	(*n* =22)
Physical abuse	86.7	26.7	43.5	4.3
Emotional abuse	93.3	66.7	34.8	8.7
Sexual abuse	80	13.3	17.4	4.3
Emotional neglect	46.7	29.4	5.8	1.4
Physical neglect	33.3	6.7	0	1.4
Supervisory neglect	20	6.7	1.4	0
Overall neglect	73.3	46.7	21.7	8.7

BPD = borderline personality disorder.

Table 3

Pearson Correlations between Maternal Borderline Features and her History of Maltreatment

Variables	Total BPD Features	Affective Instability	Identity Disturbance	Negative Relationships	Self-harm/ Impulsivity
1. Overall maltreatment	.23	.19	.13	.28	.27
2. Physical abuse	.19	.24	.15	.29	.01
3. Emotional abuse	.53***	.54***	.46**	.52**	.44**
4. Sexual abuse	.58***	.54***	.60**	.60***	.39**
5. Emotional neglect	.16	.16	.14	.18	.09
6. Physical neglect	.39*	.38*	.38*	.36*	.33*
7. Supervisory neglect	.18	.19	.11	.08	.29
8. Overall neglect	.42***	.45***	.38*	.37*	.34*

Note. *$p < .05$. **$p < .01$. ***$p < .001$.

Table 4

Independent Binary Logistic Regressions Borderline Features Subtypes and Total Features vs. Intergenerational Transmission of Child Maltreatment [Hypothesis 4a]

Predictor	*B*	*SE*	OR	Lower	Upper
Affective Instability	.19**	.08	1.21	1.04	1.41
Identity Disturbance	.14 **	.07	1.15	1.00	1.33
Negative Relationships	.21**	.09	1.24	1.04	1.47
Self-harm/Impulsivity	.18*	.10	1.19	.99	1.44
Total BPD Features	.05**	.02	1.06	1.01	1.10

Note. *$p < .10$. **$p < .05$. OR= odds ratio.

Table 5

BPD Features vs. Intergenerational Transmission of Child Maltreatment [Hypothesis 4b]

Predictor	*B*	*SE*	Odds Ratio	Lower	Upper
Affective Instability	.32*	.18	1.37	.96	2.0
Identity Disturbance	-.24	.20	.80	.53	1.17
Negative Relationships	.43**	.19	1.54	1.07	2.22
Self-harm/Impulsivity	-.14	.20	.48	.59	1.28

*p < .05, *p < .10 *Note*. Exp(*B*)= odds ratio.

Vita

Stephanie Kors was born in Long Island, New York and grew up in Charlotte, North Carolina. She attended the University of Georgia, where she obtained her B.S. in Psychology. Upon graduating, she attended graduate school at the University of Tennessee, where she is now pursuing her Ph.D. in Clinical Psychology under the mentorship of Dr. Jenny Macfie. Her research interests include attachment, trauma, and developmental psychopathology.